

CLAIMS

1. A surgical apparatus for forming a hole in a tissue in a patient, comprising:
 - 2 a first elongate member comprising a longitudinal axis; and
 - 3 at least one flexible member comprising a first end and a second end, the
 - 4 second end of said at least one flexible member free and the first end of said at
 - 5 least one flexible member fixed to the first elongate member, said at least one
 - 6 flexible member movable between a first contracted position and a second
 - 7 extended position, wherein in said first contracted position said at least one
 - 8 flexible member substantially parallels the longitudinal axis of said first
 - 9 elongate member, and wherein in said second extended position said at least one
 - 10 flexible member is substantially planar, said plane defining a plurality of axes
 - 11 lying in the plane, and said plurality of axes being non-parallel to said
 - 12 longitudinal axis of said first elongate member, wherein said at least one
 - 13 flexible member is sized and shaped for contact with a first side of a tissue in a
 - 14 patient when said at least one flexible member is in said second extended
 - 15 position.
- 16
- 1 2. The apparatus of claim 1 wherein said at least one flexible member
- 2 comprises a wire loop.
- 3
- 1 3. The apparatus of claim 1 wherein said at least one flexible member
- 2 comprises a section for stiffening said at least one flexible member.
- 3

1 4. The apparatus of claim 1, wherein in said second extended position at least
2 one of said plurality of axes defines an angle between about 0 degrees and about 180
3 degrees relative to the longitudinal axis of said elongate member.

4

1 5. The apparatus of claim 1, wherein said at least one flexible member limits
2 movement of the tissue when said at least one flexible member is in said second position.

3

1 6. The apparatus of claim 5 further comprising a cutting member.

2

1 7. The apparatus of claim 6, wherein the cutting member is axially disposed
2 within a first lumen of the first elongate member.

3

1 8. The apparatus of claim 6, wherein the cutting member comprises a needle.

2

1 9. The apparatus of claim 1 further comprising an occlusion device.

2

1 10. The apparatus of claim 9, wherein the occlusion device is selected from
2 the group consisting of a septal occluder, suture, staple, and adhesive.

3

1 11. The apparatus of claim 1 further comprising an apparatus for joining
2 tissue.

3

1 12. The apparatus of claim 11, wherein the tissue joining apparatus is a tissue
2 welding apparatus.

3

1 13. The apparatus of claim 1 further comprising a second elongate member
2 comprising a first lumen and wherein said first elongate member is for axially moving the
3 at least one flexible member substantially co-linearly with said first lumen of said second
4 elongate member.

5

1 14. The apparatus of claim 1, wherein the plurality of axes are non-parallel to
2 said longitudinal axis of said first elongate member by being biased relative to said first
3 elongate member.

4

1 15. A surgical apparatus for forming a hole in a tissue in a patient, comprising:
2 a first elongate member comprising at least a first lumen and a
3 longitudinal axis; and
4 a plurality of flexible members each comprising a first end and a second
5 end, the second end of each flexible member free and the first end of each
6 flexible member fixed relative to each other, each flexible member movable
7 between a first contracted position and a second extended position, wherein in
8 said first contracted position each flexible member substantially parallels the
9 longitudinal axis of said first elongate member, and wherein in said second
10 extended position said plurality of flexible members are substantially planar,
11 said plane defining a plurality of axes lying in the plane, said plurality of axes
12 being non-parallel to said longitudinal axis of said first elongate member,
13 wherein at least one of said plurality of flexible members is in contact with at

14 least a first surface of a tissue in a patient when said at least one flexible
15 member is in said second extended position.

16
1 16. The apparatus of claim 15, wherein at least one of said flexible members
2 in said second extended position comprises a shape selected from the group consisting of
3 polygonal, circular, and ellipsoidal.

4
1 17. The apparatus of claim 15, wherein at least one of said plurality of flexible
2 members is in contact with a second surface of said tissue in a patient when said flexible
3 member is in said second extended position.

4
1 18. The apparatus of claim 15 wherein at least one said plurality of flexible
2 members comprises a wire loop.

3
1 19. The apparatus of claim 15 wherein at least one of said plurality of flexible
2 members comprises a section for stiffening the at least one flexible member.

3
1 20. The apparatus of claim 15, wherein in said second extended position at
2 least one of said plurality of axes defines an angle between about 0 degrees and about 180
3 degrees relative to the longitudinal axis of said elongate member.

4
1 21. The apparatus of claim 15, wherein at least one of said plurality of flexible
2 members limits movement of the tissue when the at least one flexible member is in said
3 second position.

4

1 22. The apparatus of claim 21 further comprising a cutting member.

2

1 23. The apparatus of claim 22, wherein the cutting member is axially disposed
2 within the first lumen.

3

1 24. The apparatus of claim 22, wherein the cutting member comprises a
2 needle.

3

1 25. The apparatus of claim 15 further comprising an occlusion device.

2

1 26. The apparatus of claim 25, wherein the occlusion device is selected from
2 the group consisting of a septal occluder, suture, staple, and adhesive.

3

1 27. The apparatus of claim 15 further comprising an apparatus for joining
2 tissue.

3

1 28. The apparatus of claim 27, wherein the tissue joining apparatus is a tissue
2 welding apparatus.

3

1 29. The apparatus of claim 15 further comprising a second elongate member
2 coupled to at least one flexible member for axially moving the at least one flexible
3 member substantially co-linearly with the first lumen.

4

1 30. The apparatus of claim 15, wherein the plurality of axes are non-parallel to
2 said longitudinal axis of said first elongate member by being biased relative to said first
3 elongate member.

4

1 31. A method for stabilizing a tissue in a patient, comprising the steps of:
2 placing a first flexible member in contact with a first side of a tissue in a
3 patient;
4 placing a second flexible member in contact with a second side of said
5 tissue in the patient; and
6 applying pressure with at least one of said first and second flexible
7 members to said tissue in the patient.

8

1 32. The method of claim 31 further comprising the step of providing a cutting
2 member for forming a hole in said tissue.

3

1 33. The method of claim 32 further comprising the step of providing an
2 occlusion device for occluding said hole in said tissue.

3

1 34. The method of claim 33, wherein the occlusion device is selected from the
2 group consisting of a septal occluder, suture, staple, and adhesive.

3

1 35. The method of claim 32 further comprising an apparatus for joining tissue.
2

1 36. The method of claim 35, wherein the tissue joining apparatus is a tissue
2 welding apparatus.

3

1 37. A method for stabilizing a tissue in a patient, comprising the steps of:
2 extending a plurality of flexible members from a first lumen of a first
3 elongate member;
4 placing at least one of said plurality of flexible members in contact with
5 at least a first surface of a tissue in a patient; and
6 applying pressure with said at least one of said plurality of flexible
7 members to said tissue in the patient.

8

1 38. The method of claim 37 further comprising the step of providing a cutting
2 member for forming a hole in said tissue.

3

1 39. The method of claim 38 further comprising the step of providing an
2 occlusion device for occluding said hole in said tissue.

3

1 40. The method of claim 39, wherein the occlusion device is selected from the
2 group consisting of a septal occluder, suture, staple, and adhesive.

3

1 41. The method of claim 38 further comprising an apparatus for joining tissue.
2

1 42. The method of claim 41, wherein the tissue joining apparatus is a tissue
2 welding apparatus.

3

1 43. A surgical apparatus for producing a hole in a tissue in a patient,
2 comprising:

3 a catheter comprising a first lumen comprising an opening;
4 a delivery member axially movable within the first lumen of the
5 catheter, the delivery member comprising a first distal end extending from the
6 catheter and a second lumen comprising an opening;
7 a cutting member axially movable within the second lumen of the
8 delivery member, the cutting member comprising a second distal end extending
9 from the delivery member and a third lumen comprising an opening.

10

1 44. The apparatus of claim 43 further comprising a guidewire axially movable
2 within the third lumen of the cutting member, comprising a third distal end extending
3 from the cutting member.

4

1 45. The apparatus of claim 43 further comprising a flexible member
2 comprising at least a first free end and a second free end, said at least first free end and
3 second free end each capable of undergoing a first articulation and a second articulation.

4

1 46. The apparatus of claim 45 further comprising a second elongate member
2 coupled to the flexible member for axially moving the flexible member substantially co-
3 linearly with the first lumen.

4

1 47. The apparatus of claim 43, wherein the cutting member comprises a
2 needle.

3

1 48. The apparatus of claim 43 further comprising an occlusion device.

2

1 49. The apparatus of claim 48, wherein the occlusion device is selected from
2 the group consisting of a septal occluder, suture, staple, and adhesive.

3

1 50. The apparatus of claim 43 further comprising an apparatus for joining
2 tissue.

3

1 51. The apparatus of claim 35, wherein the tissue joining apparatus is a tissue
2 welding apparatus.

3

1 52. A surgical apparatus for producing a hole in a tissue in a patient,
2 comprising:

3 an elongate member comprising a first lumen having an opening; and
4 a coil member having a first portion and a second portion and axially
5 movable within the lumen of the elongate member, the coil member sized and
6 shaped for being gradually transferred out of the opening in the elongate
7 member to position said first portion of said coil member adjacent a first side of
8 a tissue in a patient, and said second portion of said coil member adjacent a
9 second side of said tissue in a patient.

10

1 53. The apparatus of claim 52 further comprising a cutting member axially
2 movable within the lumen of the elongate member, wherein the cutting member
3 comprises a distal end extending from the elongate member.

4

1 54. The apparatus of claim 53, wherein the cutting member comprises a
2 needle.

3

1 55. The apparatus of claim 52 further comprising a second elongate member
2 coupled to the coil member for axially moving the at least one flexible member
3 substantially co-linearly with the first lumen.

4

1 56. The apparatus of claim 52 further comprising an occlusion device.

2

1 57. The apparatus of claim 56, wherein the occlusion device is selected from
2 the group consisting of a septal occluder, suture, staple, and adhesive.

3

1 58. The apparatus of claim 52 further comprising an apparatus for joining
2 tissue.

3

1 59. The apparatus of claim 58, wherein the tissue joining apparatus is a tissue
2 welding apparatus.

3

1